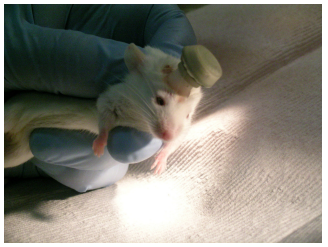
Rodent Radio for Neurological Studies

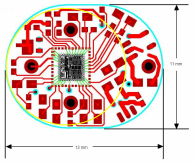
Grant R44NS044656 | Period of support: 09/2002 – 08/2006

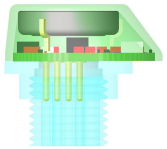
Challenge/Problem: To develop a low noise four-channel wireless data acquisition system to monitor physiological parameters such as electroencephalogram (EEG), electromyogram (EMG), electrocardiogram (ECG), or electrooculogram (EOG) in small laboratory animals.

Progress: Prototype has been designed and the development is on going. The size and weight has been tested on a mouse.

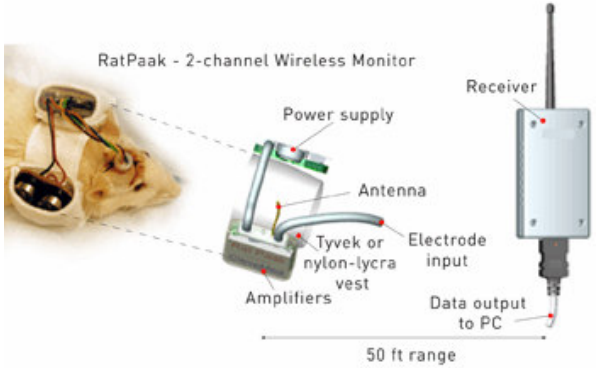


Approach: Develop and characterize an 4-channel ASIC, design the transmitter and develop the packaging (oval shape - 11mm x 13 mm, 1.7 grams). We have also designed and built a receiver that interfaces to a USB port on a PC or a Laptop and have developed software to display and record the physiological signal waveforms.





Current/Near Term Products: RatPaak®



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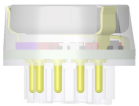
Future Plans: MousePaak™
- Smaller size (10 mm dia., 1.0 gram)
- Improved connector – smaller, lighter and shorter
- Multi-device receiver (16 mice monitored simultaneously)
- Automatic Sleep Staging software



Keywords: telemetry, laboratory mouse, brain electrical activity, miniature biomedical equipment